

BREASTFEEDING AS SUSTAINABLE ATTITUDE: A PILOT STUDY

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ABSTRACT

The benefits of breastfeeding to babies and mothers are well established in most countries. The relationship between breastfeeding and environmental protection hasn't yet been studied. To evaluate mother's perception of breastfeeding as an environmentally friend attitude a questionnaire which involved 140 pregnant women was carried out in Portugal in 2013. After analysis of the results it was concluded that the majority of women in the pilot study were well aware of the health benefits of breastfeeding for the baby but not for themselves. Moreover, women in the study were not aware of the relation between breastfeeding and environmental protection.

Key words: Breastfeeding. Health Care. Environment. Education.

RESUMO

O aleitamento materno como atitude ambientalmente sustentável: um estudo piloto

Os benefícios da amamentação exclusiva tanto para as mães como para os bebês é bem conhecida na maioria dos países. Contudo, a relação existente entre o processo de amamentação e a proteção ambiental ainda não foi estudada. Para avaliar a percepção das mães sobre a amamentação como uma atitude amiga do ambiente foi realizado em Portugal, durante o ano de 2013, um inquérito a 140 mulheres grávidas. Após análise dos resultados concluiu-se que a maioria das mulheres estão conscientes dos benefícios da amamentação relativamente à saúde do bebé mas não em relação à sua própria saúde. Além disso, as mulheres que participaram neste estudo não estavam conscientes da relação que existe entre o processo de amamentação e a proteção ambiental.

Palavras-chave: Aleitamento. Saúde. Ambiente. Educação.

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INTRODUCTION

Breastfeeding is considered a major step for health promotion in children all over the world (UNICEF, 1990; Duarte *et al.*, 2002; WHO, 2003; Berhrman *et al.*, 2004; AAP, 2005).

Its prevalence has varied throughout times having registered very low levels in the decades that followed the Second World War owing to the social and behavior impacts that this event caused and that dramatically changed women's life style.

According to the Portuguese Observatory (OBAM, 2012) breastfeeding promotion and maternal support are a public health priority because not only breastfeeding is the natural way to feed infants but also because low indices of breastfeeding and early weaning have important negative impacts in the health and social structure of women, children, the community and the environment, resulting in an excessive spending of money by the national health service as well as in an increment of health inequalities.

The superiority of maternal milk doesn't need to be demonstrated since the best proof of that is the survival of the human species until the middle of the 20th century with little or no human milk substitutes (Carapeto e de Almeida, 2008).

It was only during the second half of the last century that large scale commerce of substitution milks appeared. These were promoted as being a food of a better quality than mother's milk.

However, breastfeeding gives a complete and well adapted nutrition to the newborns. Mother's milk is sterile, easy to digest, easy for intestinal absorption and carries health defenses from the mother to its baby which will help him fighting diseases during the first months of life.

Breastfeeding is also beneficial for the mother starting with the experience of a unique relationship with her baby.

It also helps mothers to recover physically from the stress of pregnancy because it accelerates uterus involution making it easier for it to return to its normal position and proportions (Carapeto e de Almeida, 2008).

There are several advantages in breastfeeding and there is even a world consensus that this is the best way to feed

infants up to 4-6 months of life (Sarafana *et al.*, 2006).

Several authors mention different advantages such as the prevention of obesity (Brendler, 2011) protection against diabetes, celiac disease, respiratory infections, allergies, hypertension and dental caries, among other problems (Hanson, 1999; Castadelli, 2011).

Unfortunately, in Portugal still there is no statistical data reflecting the incidence and the prevalence of maternal breastfeeding although some studies suggest that the evolution of this practice has followed the same trends seen in other European countries.

Industrialization, the II World War, feminist movements, women's entering the labour market, the shrinking of families and the publicity about the advantages of introducing mother's milk substitutes had as a consequence a decrease in the breastfeeding attitude. Only in the decade of 1970 Portugal has seen a return to breastfeeding (Brito, *et al.*, 2011).

Nevertheless, Portugal still doesn't have a global nutritional policy (Gregório, *et al.*, 2010) although there are some specific programmes that act in a somewhat isolated way. The prevalence of exclusive breastfeeding up to 3 months of age in Portuguese women is only of 51% (Gregório, *et al.*, 2010).

Besides all this, important as it is, is the notion that the practice of breastfeeding is intimately connected to environmental quality. At the beginning of the third millennium we are all more aware of the binomial equation environmental quality – health quality.

This environmental quality, specifically related to this situation, is linked to the consumption and the production of residues that in the end will affect the environment.

Of milk substitutes will lead to as increase of consumption of raw materials to manufacture packaging and then to the increase of urban residues when that packaging has lost its purpose. These two actions have direct impacts in the environmental quality.

At first because it deplete the nature of raw materials and expends energy with the consequent release of gases that contribute to the green house effect.

At second because it increases the need to deal with more urban residues either by constructing landfills, incinerators or any

other way recover or convert them. In any case there will be expenditure of energy and, worse than all, both actions (first and second) lead to an enormous expenditure of fresh water.

Worldwide water is at the center of human health, the environment, and sustainable development. Of all the natural resources needed for economic development as well as life quality, water is one of the most essential. Today we are already facing formidable challenges and we need to be able to deal with them in a wise way.

Amongst these challenges, as specified by Duda e El-Ashry (2000) the most problematic ones may be the rapid population growth, the increasing demands for water to satisfy people's needs (both in agriculture and in expanding urban centers), the failing water quality owing to pollution (and associated health and environmental impacts), groundwater depletion and, of extreme importance, international conflicts over transboundary water resources.

The main objective of the present work was to conduct a pilot study to measure the awareness of pregnant women to the relation that exists between the act of breastfeeding and environmental protection.

The main question in mind when the pilot study was designed was: "are pregnant women aware that breastfeeding is an act that protects their own health, their baby's health and the health of the environment?"

MATERIALS AND METHODS

A questionnaire was designed to be given to pregnant women attending pre-natal care at St. Mary's Hospital in Lisbon during the months of March, April and June 2013.

The questionnaire was based on that used and tested in a Brazilian study (Menegusse, 2010) having been adapted to the Portuguese population and to the specific theme of this study. In total, the number of questionnaires that were used in this study was 140 although many more were distributed and collected.

The percentage of answered questionnaires was not an important value for this study since the aim was to know the perception that the women that really answer the questionnaire fully and correctly had about the subject "health and environment". The questionnaire was anonymous and women that received the questionnaire voluntarily and with no supervision answered and returned it.

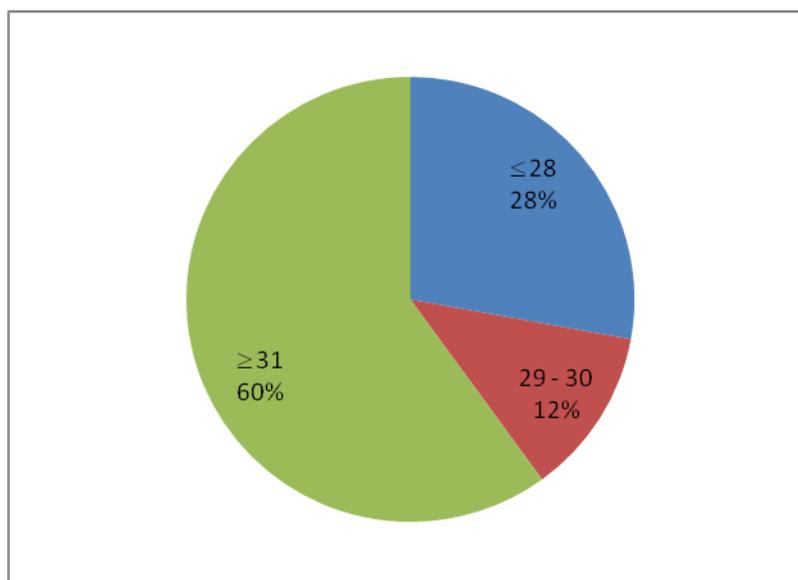
Statistical analysis was done using the programme SPSS® (*Statistical Package for Social Sciences*) version 20.0 for Microsoft Windows®. From the number of variables used in the questionnaire the only ones that are of interest for the present work are: a) age; b) education; c) breastfed previous infant; d) benefits of breastfeeding for mother; e) benefits of breastfeeding for infant and f) benefits of breastfeeding for the environment.

RESULTS

From 140 questionnaires that were analyzed the distribution by age groups was as shown in Table 1, Graph 1.

Table 1 - Distribution by age.

Age groups	Number of women	Frequency	Percentage
≤ 28 anos	39	0,28	27,9
29 – 30 anos	17	0,12	12,1
≥ 31 anos	84	0,6	60
Total	140		100



Graph 1 - Total women by age group.

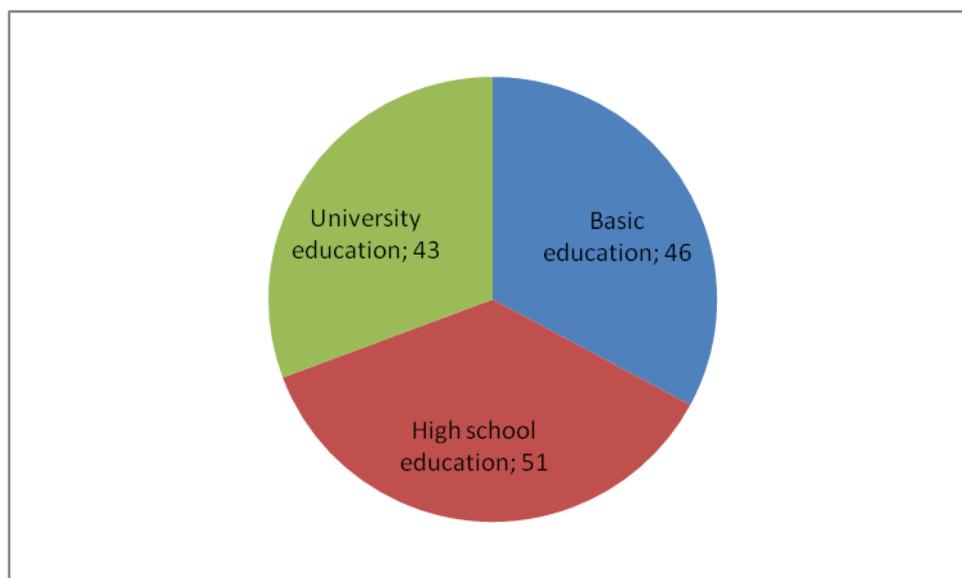
From the analysis of data one concludes that the majority of women that voluntarily answered the questionnaire is above 30 years of age.

Table 2 and graph 2 show the degree of education of the population in the study

group and its distribution by groups. From its analysis one can see that the study population is very evenly distributed by the three educational groups.

Table 2 - Distribution by educational levels.

	Number of women	Frequency	Percentage
Basic education (up to 9th degree of school)	46	0,33	32,9
High school education (up to 12th degree of school)	51	0,36	36,4
University education (having or not a complete degree)	43	0,31	30,7
Total	140		100,0



Graph 2 - Distribution of women by education levels.

From the statistical data gathered the study population may be characterized as being mainly above 31 years of age.

Mothers with less than 28 years of age are the smallest group here represented. In relation to the educational parameter and as stated above the study population is evenly distributed among the three categories chosen.

Analysis also showed that in the study group 44% of women were in their first pregnancy. The other 56% had already at least one child.

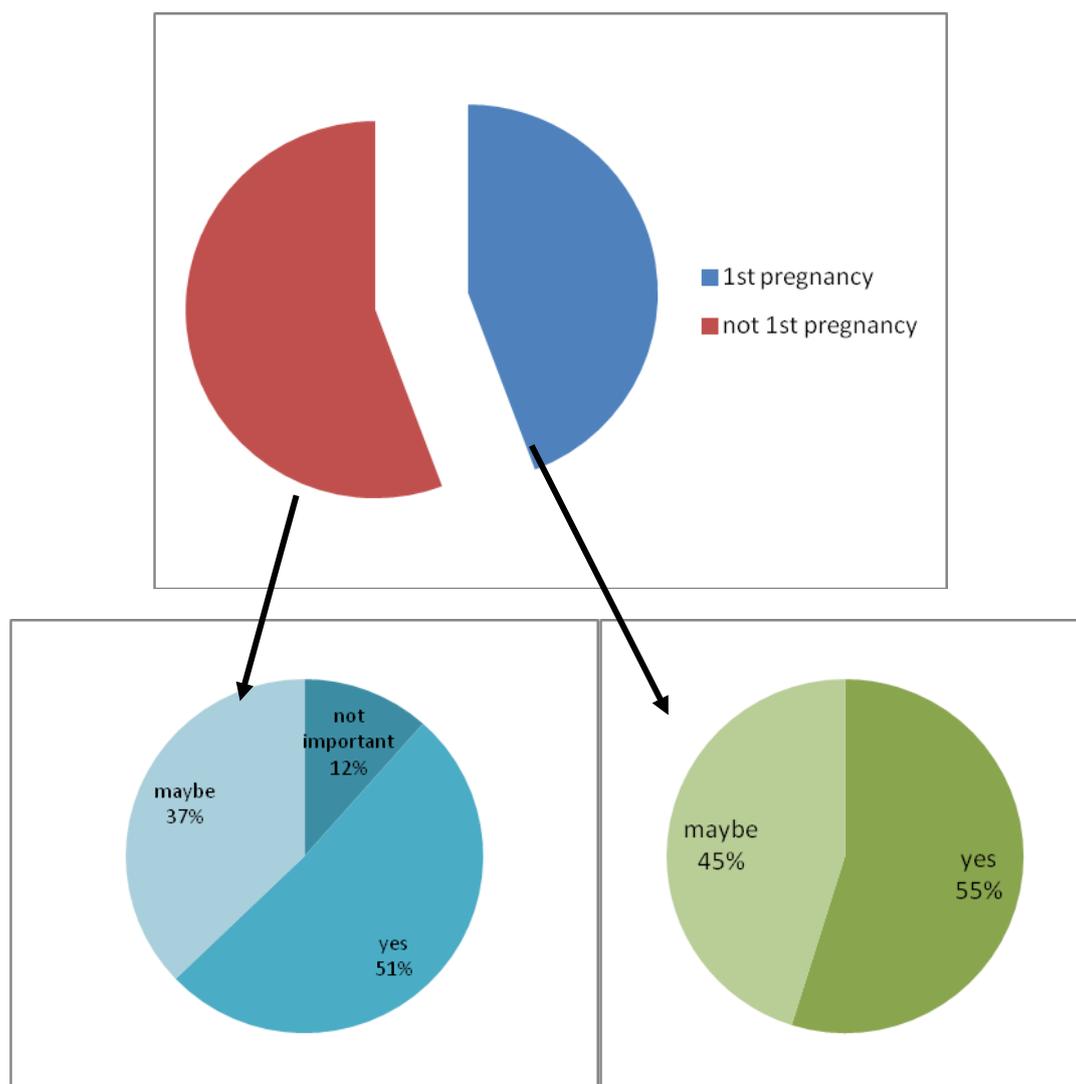
From the answers collected it was found that from the 56% of women that had already at least one child all of them had breastfed their infants for at least some time. From the women that were pregnant for the

first time in the study group all of them answered that they intended to breastfeed for at least three months. Moreover, the reason for not carrying on breastfeeding longer had to do with the need to return to work.

All the women in the study group, regardless the fact that they were pregnant for the first time or not, knew that breastfeeding was important for the baby's health. However, when the question was about the mother's health the answers were very variable with almost 50% of women that were pregnant for the first time saying that they were not sure about the types of benefits that their own health could get and 12% of women already with at least one child saying that such a factor was not important for them (Table 3).

Table 3 - Distribution in percentage of answers related to breastfeeding and health.

	Breastfeeding is important for baby's health		Breastfeeding is important for mother's health			
	Yes	No	Yes	No	Maybe	Not an important issue
Women that were pregnant for the first time	100%	0	55%	0	45%	0
Women that had already at least one child of their own	100%	0	51%	0	37%	12%



Graph 3 - Distribution of answers related to the benefits of breastfeeding to mother's health.

The questionnaire also included more detailed questions about the health benefits of breastfeeding which will be treated in a future work since the main aim of this paper is the analysis of the perception that women have about breastfeeding and environment. The question was stated as:

"Do you think breastfeeding is an environmentally friend attitude?" (answer "Yes", "No", "Doesn't know" or "Never thought about that") followed by the next question to be

answered only by those who said "Yes" (Table 4).

Although this was only a pilot study and the population sampled very small, it still is interesting to observe that 83% of the women included in this study did not have an opinion about the issue of breastfeeding and environmental protection. Only 23 women said that they thought that breastfeeding was an environmentally friend attitude.

Table 4 - Distribution of answers to the question "Do you think breastfeeding is an environmentally friend attitude?".

Do you think breastfeeding is an environmentally friend attitude?				
Yes	16,3%	23 women	Because is natural	11 women
			Because is more economic	3 women
			Because decreases consumption of man made products	0 women
			Because saves natural resources	4 women
			Because saves energy	0 women
			Because decreases consumption of medical products	5 women
No	0,7%	1 woman		
Doesn't know	63%	88 women		
Never thought about that	20%	28 women		

DISCUSSION

The present pilot study was done on a group of 140 pregnant women that answered the questionnaire in a complete and correct manner. All the questionnaires that were not properly filled in were discarded.

For instance, if there were questions left in blank, or if there were questions with contradictory answers, those were not included in the study sample. Owing to this the number of inquiries used in this study was significantly smaller than the number of inquiries collected.

The group of women used in the present study was mainly in the age group ≥ 31 years of age (60%) and the level of their education was evenly distributed within the classes chosen for classification.

From the answers important for the present work it is worth mentioning the fact that all the women are well aware that breastfeeding is an important factor in the baby's health as well as the fact that all women intended to breastfeed their babies for at least three months. This is very important since there were times when the tendency was the opposite (Brito *et al.*, 2011).

Coutinho e Leal (2005) in a study with 460 Portuguese women came to the conclusion that almost 92% of women had breastfed their children for a period that, in some cases, reached six months.

Uchendo *et al.*, (2009) also found the same results stated here in what concerns the

perception of women about the importance of breastfeeding for the baby's health (84% of women in their study believed that breastfeeding was important for the baby) and Oliveira *et al.*, in 2013 reached the same conclusion in their study with Brazilian women.

Although Sarafana *et al* (2006) and Jessri *et al.*, (2013) concluded that mothers above the 34 years of age and with a higher degree of education are more prone to breastfeed, in this study all the women, regardless their age or degree of education, said they intended to breastfeed for at least three months.

The innovative question in this work was about breastfeeding as an environmentally friend attitude. It wasn't possible to find references in the literature that dealt with this subject which make even more difficult to take strong conclusions.

Given the small number of women included in the study it isn't possible to extrapolate the results obtained here to the Portuguese population.

However, there are some interesting aspects that may be worth to comment. In 2011 Nunes, C. studied a group of 102 pregnant women and concluded that during pregnancy women change their consumption patterns.

However, this change in behavior doesn't go in the direction of environmental protection and the consumption of less man made products to preserve natural resources.

Instead it is seen a change in the type of products that are consumed with no reflection in the amount of consumed products.

This is to say that pregnant women worry about their consumption patterns in relation to their health benefits but with no concern for the health of the environment.

In the present study only 23 women of the 140 saw breastfeeding as an environmentally friend attitude. Interesting is to observe that these 23 women belonged, all of them, to the group having "University education".

Although a university degree isn't always a synonym of culture, it seems here that the longer women stay at school the higher is the probability to become aware of social and environmental problems. Nevertheless, this awareness doesn't seem to be fully understood if one looks closely at the answers given to why they believed that breastfeeding was favorable to the environment.

Of these 23 women, 11 said that breastfeeding was good to the environment "because it is natural" which reveals a complete unsuitable understanding of the subject.

Four women answered "Because saves natural resources" but given the answers of the previous group one can't be sure if they know what that means. None of the women was sensitive to the aspect of "decreases consumption of man made products".

Although these results are short they indicate, nevertheless, the need to continue to invest in environmental education, health education and environmental health education. Gifford (2014) agrees that education is important and states that individuals with more education in general are more concerned about the environment.

According to the same author education alone often does not lead to more proenvironmental behavior, but it serves as a priming agent. In a society where people spend a considerable time dealing with virtual environments, where many daily activities, like shopping, are made easier by the on-line services, there is a need to assure that people are in touch with reality and environmental problems which may be often mask by the colorful pictures in the computer screens.

It is easier not to think about environmental problems, like residues' production, when one goes shopping to a virtual supermarket. Products are often pictured without showing their packaging and only when they get to one's home is it possible to see the amount of plastic, cardboard or any other materials used in its wrapping.

Fortunately the relevance of environmental education research seems to be expanding (Ardoin *et al.*, 2013) and this is important since environmental education intertwines with health as well as with many other aspects of human life.

Sund e Öhmana (2013) stated that we should take universal values into consideration in education and see them as a part of the educational process, rather than as educational goals.

Only by doing this will it be possible to link the gap that exist within society in what concerns ethics and sustainable values.

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